

CARNIVOROUS PLANT NEWSLETTER

Journal of the International Carnivorous Plant Society

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September 2001



Front Cover: *Nepenthes tobaica* and *Thomisus nepenthophilus* spiders, by ICPS photo contest winner Thomas Carow. See article on page 85.

Back Cover: *Drosera silvicola* in Western Australia. See article by Robert Gibson on page 78.

Carnivorous Plant Newsletter is dedicated to spreading knowledge and news related to carnivorous plants. Reader contributions are essential for this mission to be successful. Do not hesitate to contact the editors with information about your plants, conservation projects, field trips, or noteworthy events. Contributors should review the "Instructions to Authors" printed in the March issue of each year. Advertisers should contact the editors. Views expressed in this publication are those of the authors, not the editorial staff.

All correspondence regarding dues, address changes and missing issues should be sent to the Membership Coordinator at the ICPS. Do not send such correspondence to the editors. Checks for subscriptions and back issues should be made to the ICPS in US funds. Dues for 2002 are \$25.

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LOOKING BACK: CPN 25 YEARS AGO

Arnold Monett gave a warning to terrarium builders who might repair their plant-filled terraria: "I did this before going to bed and the next morning, disaster. I lost dozens of my sundews, several of my *Darlingtonia californica*, *Sarracenia*, and butterwort *Pinguicula*. Checking further into this problem, I have realized where I went wrong: it was the aquarium cement releasing acetic acid when drying. I, for one, have learned a lesson and am glad to pass it on...."

A COMPLETE SENTENCE FROM THE PRESIDENT

DAVID GRAY—ICPS President
584 Castro St. #687 • San Francisco CA 94114 • USA

For the past year I have had the enviable experience of immersing myself in carnivorous plants. I have been putting on a conference, visiting wild carnivorous plant sites, educating children about carnivorous plants, and volunteering to work with the carnivorous plants at my local botanical garden. I have met many of the “who-is-who” figures of the carnivorous plant world, and have come to know almost all the genera of plants that are carnivorous or even think about it. I have never been more gratified in an endeavor.

The greatest challenges for me have been in participating in many of the behind-the-scenes work of the ICPS board of directors. Many changes have taken place that may not be apparent to the general membership. Let me describe some of these positive developments.

Members will be glad to know that we have resolved many of our lingering legal loose ends. The back issues of the Carnivorous Plant Newsletter have been moved, inventoried, and organized, all under the aegis of the competent ICPS board member Cindy Slezak. Cindy has also worked to streamline the entire membership processes for renewals and new members. Members have been vocal in commending these improvements. The seed bank has been perfectly organized by ICPS board member John Brittnacher. The seed bank inventory is now always up to date on-line, and trade is brisk! Thanks to the many collectors and cultivators who make the seed bank possible. Please do continue to donate seed. The multi-talented Barry Meyers-Rice is recasting our financial picture. We now know we are in very good fiscal shape, whereas in the past we were never quite sure. Barry continues as one of the editors of the newsletter, and his conservation initiatives are making a real difference for endangered species (can you believe all the things this guy does?).

Regrettably, we also have some unwelcome news. We are faced with the need to raise the dues; our costs for international postage are escalating rapidly and will continue to rise in the next few years. While these cost increases originate in the postal services of other nations, we have decided to raise dues only for North American members. The U.S. economy is still very strong in relation to the rest of the world, and the dollar is disproportionately expensive to those outside this country. In essence, we are asking our American members to help subsidize the costs of overseas shipping. Beginning with January of 2002, dues will be a flat cost of \$25 for all members. You can see this change on our membership renewal form. Furthermore, John Brittnacher has analyzed his seed bank costs, and has determined that the shipping and handling charge for seedbank orders must increase to \$3 immediately.

One of the most long awaited advances is that we now can accept Visa and MasterCard payments for memberships and seed bank orders. This will help boost our international membership in particular. Obtaining the ability to accept such credit payments was previously bogged down in an astonishing quagmire of red tape associated with our nonprofit status.

There is more good news to come. Stay with us and participate as we move forward in the new century. As always, I welcome your comments and suggestions at david@carnivorousplants.org or at the address above.

Cheers,
David

THE 4TH WORLD CONFERENCE OF THE INTERNATIONAL CARNIVOROUS PLANT SOCIETY

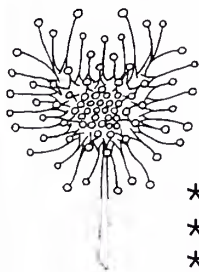


The 4th International Carnivorous Plant Conference, featuring oral and poster presentations on carnivorous plant research, exhibitions, and plant sales will be held at National Science Museum, Shinjuku Campus, Hyakunin-Cho, Shinjuku, Tokyo, Japan on June 21st, 22nd and 23rd, 2002. Carnivorous plant workshops will be performed at 8:00-10:00 pm on June 21st and 22nd at National Olympics Memorial Youth Center, Yoyogi, Tokyo. A field trip to the natural habitat of the Japan's endemic and endangered *Pinguicula ramosa* will be made on June 23rd and 24th.

If you have any questions about the Conference, inquire with: Prof. Dr. Katsuhiko Kondo, Laboratory of Plant Chromosome and Gene Stock, Graduate School of Science, Hiroshima University, 1-4-3 Kagamiyama, Higashi-Hiroshima City 739-8526, Japan (phone: +81-824-24-7490, Fax: +81-824-24-0738, E-mail: kkondo@hiroshima-u.ac.jp).

Please register for the Conference using the form included in this issue of Carnivorous Plant Newsletter. The form is also available on the ICPS web site at: <http://www.carnivorousplants.org>.

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NEWS AND VIEWS

Richard Curzon (mcu93543@earthlink.net, 37420 97th St. East, Littlerock CA 93543 USA) wrote about the well known speed of *Drosera burmannii*: While on my daily routine to check on my plants, I saw an ant crawling the borders of my *D. burmannii* pot where the long marginal tentacles hung over, and I thought, "This will be interesting." Sure enough, the ant got caught. For two seconds the tentacle lay still, then it started moving, but extremely quickly! Once it started moving it took less than four seconds to curl all the way over to the center of the leaf! I cannot imagine how surprised the ant must have been! The plant was grown about 15 cm (6 inches) under double grow lights, in 50/50 peat/sand soil, watered normally, and at about 50% humidity. Nothing abnormal, yet it produced miracles just the same!

I would like to hear from other carnivorous plant growers in the Antelope Valley or southern California area. I have plenty of zebra bromeliad seed for trade, too.

Chris Teichreb (cteichreb@hotmail.com, 1512 Fern Street, North Vancouver, BC, V7J 1H6, Canada) writes: The newly formed Vancouver Carnivorous Plant Club (VCPC) held its first show and sale on April 22 at the Richmond Nature Park in Richmond, B.C. Canada. Despite the dreary weather, hundreds of visitors and dozens of carnivorous plant enthusiasts showed up to buy some carnivores or just view these "bizarre" plants. By the end of the day, we had reached twenty-three members and had raised a donation for the Richmond Nature Park, dedicated to bringing about awareness of bog ecosystems. For information on upcoming meetings or to become a member, please visit our web site (www.geocities.com/vcpc2000) or drop me a line in the mail.

Barry Meyers-Rice (barry@carnivorousplants.org, P.O. Box 72741 Davis, CA 95617) writes: One of the sources of seemingly endless discussions on the internet is the sport of guessing when some long-promised carnivorous plant book will finally be available for purchase. Volume III of Lowrie took ages! Now people are wondering when Charles Clarke's new book will arrive. Well, here is something else to wait for—in a recent letter Don Schnell mentioned that his revised book on carnivorous plants has passed another round of editorial cruelties. Don's first book is much-loved by us all, so this book will be a treat! On another topic, in wintery February I was in Buffalo, New York to give a talk on carnivorous plants at their science center. One of the staff was kind enough to take me on a tour of natural areas in western New York. One highlight was a bog that has *Drosera*, *Utricularia*, and *Sarracenia*. Unfortunately, because of the bitterly cold and windy conditions, the bog was still covered with snow and ice which crackled dryly underfoot. Even so, dried flower stalks of *Sarracenia purpurea* subsp. *purpurea* were easily visible emerging from the windswept snow. So I suppose I saw carnivorous plants on the trip (sort of)!

"Sundew" Matt (sundew@hotmail.com, P.O. Box 1023, Bronx, NY 10471) writes: I specialize in rare South American and African *Drosera* and would like to correspond with others having a similar interest. I would also like to hear from anybody living in or travelling to countries on either of these continents. I believe I have noticed a change in the carnivorous plant enthusiast community in the last several years—it seems that growers more often take rare plants for granted because they feel they can always buy them again if they kill them, and hardly anyone seeks out new or rare species, at least when it comes to *Drosera*. (An obvious exception to this is our Brazilian buddy Fernando to whom I will be forever grateful for his knowledge and kindness!) Even with *Nepenthes*, it is a few dedicated people who are out there travelling to remote areas to bring plants back into cultivation. I cannot afford to travel all over the world collecting a few *Drosera*, so I am trying to be a little resourceful and get in touch with others who might be as seri-

ous about *Drosera* as I am. Renewing some trading circles would be a good way to swap information with others and get some new plants into cultivation. Of particular interest to me are *Drosera meristocaulis* (from Neblina), *D. humbertii* (from Madagascar) and any species growing in Africa, especially north of South Africa. My web page can be found at: <http://www.geocities.com/sundewmatt/growlist.html>

John Brittnacher (P.O. Box 72222, Davis, CA 95617 USA) writes: How much is that book really worth? We've all seen the \$14,000 porcelain cupids on The Antiques Road Show. How much are Allen Lowrie's books *Carnivorous Plants of Australia Volumes 1 and 2* worth? They have been out of print for something like 10 years. I look for copies in every used book store I come across. No luck so far. The Clayton's of Triffid Park in Australia lists copies of *Carnivorous Plants of Australia Volumes 1 and 2* in the range of AUS\$500 to AUS\$1000. That is US\$260 for a soft cover Volume 2 to US\$520 for the hard cover version of Volume 1. WOW! Last March, Bruce Salmon did an e-mail auction of a copy of each volume. We were going to put The Antiques Road Show to the test! After a few rounds of bidding Volume 1 sold for NZ\$800 (US\$344) and Volume 2 for NZ\$400 (US\$172). I dropped out of the bidding really early so I'm still checking used book stores. At those prices, I'd be checking them anyway! Bruce's new book *Carnivorous Plants of New Zealand* should be out by the time this issue of *Carnivorous Plant Newsletter* is printed. Let's hope he isn't auctioning those too! But how much will they be worth in 10 years?

International Correspondent

UTRICULARIA GEMINILOBA IN FLOWER AT LAST!

FERNANDO RIVADAVIA • Rua Inacio Pedroso 230 • São Paulo, S.P. 05612-050 • Brazil
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Keywords: cultivation: *U. geminiloba* — observations: *U. geminiloba*.

Utricularia geminiloba Benj. was described in the mid-19th century. It belongs to section *Iperua* P.Taylor, which also includes *U. humboldtii* Schomb., *U. nephrophylla* Benj., *U. nelumbifolia* Gardn., and *U. reniformis* St.Hil.—all natives of eastern Brazil except for *U. humboldtii*, which is found in northern Brazil, southern Venezuela, and Guyana (Taylor, 1989). *U. geminiloba* is the most geographically restricted of all the above taxa, known only from the state of Rio de Janeiro and from a single collection from São Paulo state (Taylor, 1989).

The species of sect. *Iperua* are commonly referred to as epiphytic by carnivorous plant cultivators (in this respect they are often grouped with *U. longifolia* Gardn., from sect. *Psyllosperma* P.Taylor.). These are often associated with growing epiphytically in the water-filled leaf axils of bromeliads. (*U. nelumbifolia* always grows in bromeliads and *U. humboldtii* usually grows in them, while *U. reniformis* is only extremely rarely found in them.) Nonetheless, they should not be confused with the (similarly large) species of sect. *Orchidioides* A.DC., such as *U. alpina* Jacq., which truly grow on trees and even have small tubers. *U. geminiloba* was reported by Taylor (1989) to have produced small tubers, and while I had seen this in a specimen collected by a friend, I did not know it was a common plant.

U. geminiloba is a perennial with long petioles, and leaf lamina, which vary in shape from narrowly elliptic to heart-shaped. The lamina is approximately 1-5 cm long, and the petiole may vary from nearly absent to approximately 15 cm in length. In sunny habitats the leaves are often thick, leathery, and covered with dark spots or patches. Taylor (1989) also mentions smaller, spatulate leaves as being common. The stolons are thicker than in most *Utricularia*, but do not compare with the robustness of those produced by its cousin *U. reniformis*.

I have seen *U. geminiloba* three times in the wild, always at the Serra dos Órgãos

highlands, not far from the city of Rio de Janeiro (Figure 2). The first was in September 1993 during a fantastic four-day hike across these beautiful mountains. Several small sites with this species were discovered from an elevation of 1500-2000 m, but unfortunately all were flowerless.

The second time I saw *U. geminiloba* was in March 1996, during a ten-day carnivorous plant marathon around southeastern Brazil with my friend, Josef Mullins from Ireland, a botanist and carnivorous plant enthusiast. It was his first trip to the tropics (oohs and aahs at every step!) and my last for a long while, as I was about to move from São Paulo, Brazil, to Tokyo, Japan for a few years. After driving all around Minas Gerais state, Joe and I headed towards Cabo Frio, a city on the coast of R. Janeiro state, where we searched unsuccessfully for *Drosera intermedia* Hayne, the only *Drosera* species native to Brazil south of the Amazon Basin that I still had not seen in the wild. We took a road that led us from the city of Petrópolis across the Serra Órgãos, where I had heard that *D. villosa* St. Hil. grew. Other than the fantastic views along the road carved through the steep cliffs, the ascent was uneventful since we found no carnivorous plants. We finally got lucky near the top, at around 1300 m, where we found two sites with small-leaved and flowerless *U. geminiloba*—mere appetizers compared to what was in store for us that afternoon!

Descending to the city of Teresópolis, I found it hard to concentrate on that dangerously steep and winding road. My eyes constantly wandered from the magnificent views on our right, to the rocks dripping with water on our left, which offered new possibilities of finding carnivorous plants at each sharp bend of the road. Suddenly, at an altitude of around 1150 m, we realized we were passing a rock wall covered with long scapes loaded with purplish *Utricularia* flowers! (Yelps of joy as I quickly searched for a place to park.) In a flash we were outside the car, examining the plants on the wet, moss-covered rock, moving in quick spasms of excitement. I quickly realized that those hundreds of beautiful flowers, on scapes 10-40 cm high, belonged to both *U. geminiloba* and *U. nephrophylla*!

As with all *Utricularia* species from sect. *Iperua*, the flowers of *U. geminiloba* are astounding. Although they measured only around 2 × 3 cm, they were beautifully colored in bluish-purple, and the base of the lower lip bore two small vertical yellow ridges inlaid in a white patch (Figure 3). Contrary to the drawing shown in Taylor (1989), the two lobes of the lower lip were clearly longer than wide, even tongue-shaped. Examining numerous scapes of both species, we were surprised no seeds could be found.

Close to this site, we also found *U. reniformis* and *U. tricolor* St. Hil. growing in live *Sphagnum*. Both the bases of the flower scapes and the leaves of the *U. tricolor* were covered with a layer of clear gelatinous mucilage, especially where these were buried in the *Sphagnum*. I have seen this before in *U. huntii* P. Taylor, *U. pubescens* Sm., *Genlisea aurea* St. Hil., and *G. pygmaea* St. Hil., but this was the first and only time with *U. tricolor*—even though I have encountered the species at countless sites while botanizing in Brazil.

Further down the road, at around 1050 m of altitude, we located more *U. geminiloba* and *U. nephrophylla*, as well as the rare and magnificent *U. nelumbifolia* growing inside bromeliads on a cliff. We also found plenty of pinkish *D. villosa* rosettes measuring up to 9 cm in diameter. This species is widespread and extremely variable from mountain to mountain. The beautiful variety native to the Serra dos Órgãos has semi-erect leaves that droop at their apices—giving it a spider-like appearance. It also has unusually long petioles, wide lamina, and hairy flower scapes and leaves. This *D. villosa* form is featured in Slack (1980) and is the most widely cultivated of this variable taxon. The story goes that it was introduced into cultivation in the 1970's by Reginaldo Britto—a carnivorous plant enthusiast from Rio de Janeiro—who collected seeds from plants growing along that same road crossing over the Serra dos Órgãos.

Unfortunately, *U. geminiloba* did not do well in cultivation and died a few months after being collected, as it did when I collected it in 1993 and 1996. It is certainly a more sensitive species than the similar and widely-cultivated *U. reniformis* but is probably not as difficult to grow as *U. quelchii* N.E.Br., *U. jamesoniana* Oliver, or other

species of section *Orchidioides*. Judging from what I observed in the wild, I would say *U. geminiloba* can be grown in moist soil year-round, without a dry dormancy. It also seems to like indirect sunlight, high air humidity, and constantly cool temperatures between 10 and 25°C. *U. geminiloba* would probably grow well if placed among high-land *Nepenthes* in one's collection. After my two failed attempts to establish *U. geminiloba* in cultivation, more plants were obtained from the wild by friends—these plants are now being grown well, but slowly, by my friend Fábio Pinheiro. Fábio has made a very interesting observation on these plants. He noticed that when flowers are pollinated, the (normally drooping) main inflorescence axis (the peduncle) curves upwards at the insertion points of the pedicels. Therefore pollination of several flowers on a single inflorescence will result in successive bends in the peduncle, which gives it the appearance of a series of steps.

In October, 1999, I visited the Serra dos Órgãos and saw *U. geminiloba* in the wild for the third time. I revisited the roadside site I discovered with Joe in 1996. Sadly, there were no flowers and the leaves were rather small. The site was humid, but dry, and when I lifted small bits of moss off the rocks I was surprised to see numerous small tubers. Looking around I found they were very common. It must be a dry season phenomenon for this species.

While driving down the Serra dos Órgãos from Teresópolis to Rio de Janeiro, I realized the roadside was absolutely packed with *U. geminiloba*! It had done a great job of invading the rock walls carved by the construction of the highway, thriving all the way from around 425-1000m in altitude. Although their mossy habitats were dripping with water in most places, there were still plenty of tubers on the plants. Best of all, there were hundreds of beautiful flower scapes along this road. These flowers were more typical in shape, with shorter and rounder lower lobes. Strangely enough, once again I searched dozens of scapes and could not find a single seed pod.

References:

- Slack, A. 1980, *Carnivorous Plants*, Reed, London.
Taylor, P. 1989, *The Genus Utricularia—a taxonomic monograph*, Kew Bull. Additional Series XIV, HMSO, London.



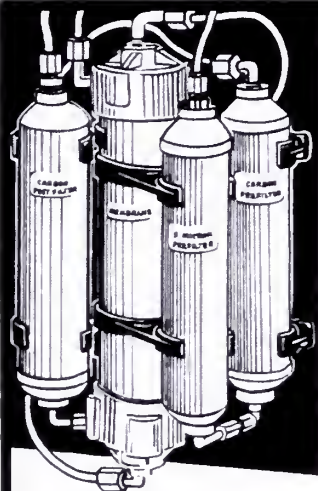
Figure 1: *U. geminiloba* tubers.



Figure 2: *U. geminiloba* leaves on a rock wall at Serra dos Órgãos.



Figure 3: *U. geminiloba*.



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NEW CULTIVARS

Keywords: cultivar: *Nepenthes* 'Scarlet Splash', *Utricularia calycifida* 'Asenath Waite'.

Nepenthes 'Scarlet Splash'

Submitted: 23 April 2001

Nepenthes 'Scarlet Splash' is a variegated hybrid. From its appearance, I think it is probably a clone of *Nepenthes* \times *coccinea*, ((*Nepenthes rafflesiana* \times *Nepenthes ampullaria*) \times *Nepenthes mirabilis*). It is distinguished by its yellow variegated foliage. The pattern of variegation appears mostly as longitudinal stripes centered along the leaf-blade midrib (see Figure 1). The dark green leaves, decorated with patterns of pale green and light yellow variegation are striking, especially when red highlights also appear in the leaves. The pitcher lids and parts of the pitcher body may also be variegated. *Nepenthes* 'Scarlet Splash' has scarlet pitchers which measure 10 cm long on average (4 inches), and have a deltoid, red and green striped peristome which is about 1.2 cm (0.5 inch) wide (see Figure 2). The oval lid is slightly domed with a small keel.

The plant was found in a collection in Europe in the late 1980s, and was given to Dennis Cathcart in Sarasota Florida. He then gave it to me. I am describing the

cultivar with Dennis's approval.

This cultivar may only be reproduced by vegetative means in order to maintain the character and details of the cultivar's variegation. The cultivar epithet is intended to be a descriptive adaptation of the common name for *Nepenthes* \times *coccinea*, "scarlet pitcher plant."

—STEPHAN J. HINKSON • 916 Indian Lane • Las Vegas NV 89108-1030 • USA

Utricularia 'Asenath Waite'

Submitted: 30 April 2001

The marvelous species *Utricularia calycifida* has yielded a number of cultivars (Carniv. Pl. Newslett. 29:1, p.14, 2000). This is because a number of strikingly different flower types are in cultivation. The attractive leaf venation is an added bonus. Despite my early failures in cross-pollinating the different cultivars (Carniv. Pl. Newslett. 22:3, p.56, 1993), I have made many intraspecific crosses using my *Utricularia calycifida* and have developed some interesting plants. While the majority of the seedlings are almost indistinguishable from one parent or the other, approximately one out of fifteen crosses show a seedling with interesting new characteristics. Even so, after all the crosses I have made, only one plant has shown characters worthy of cultivar designation. This is the new cultivar, *Utricularia* 'Asenath Waite'.

Utricularia 'Asenath Waite' resulted from a cross I made in 2000 between *Utricularia* 'Lavinia Whateley' (seed parent) and *Utricularia* 'Mrs. Marsh'. Interestingly, *Utricularia* 'Asenath Waite' has prominent purple leaf venation absent in both its parents. The flowers of this new cultivar are distinctive. The corolla lips are large and have a lovely blue-lilac blush. The lower lip has a large palate bulge with a yellow splotch at the crest. The rest of the palate bulge is covered with spots similar to those on *Utricularia* 'Mrs. Marsh', but much bolder.

Utricularia 'Asenath Waite' should only be propagated by vegetative means. There is no guarantee that seed progeny would maintain the characters of this cultivar. Furthermore, many *Utricularia calycifida* plants grown from seed are slow growing. In contrast, the highly vigorous nature of *Utricularia* 'Asenath Waite' in cultivation was the final criterion I demanded when breeding superior plants for cultivar status.

Utricularia 'Asenath Waite' will first be offered to the public at the annual October plant sale at UC Davis (California). After that, it will be provided to various carnivorous plant nurseries. It may be possible to obtain the cultivar directly from me.

The cultivar name was nominated and submitted for registration by me on 30 April (Walpurgis Day), 2001. The cultivar epithet notes a witch from the story, "The Thing on the Doorstep," by H.P. Lovecraft. Asenath Waite shared many physical characteristics of her ancestor Mrs. Marsh of Innsmouth. Asenath also had an interesting propensity for shallow plantings in soft soils. Additional photos may be seen archived at <http://www.sarracenienia.com>.

—BARRY MEYERS-RICE • P.O. BOX 72741 • Davis, CA 95617 • USA



Figure 1: *Nepenthes* 'Scarlet Splash', photo by Barry Meyers-Rice.



Figure 2: *Nepenthes* 'Scarlet Splash', photo by Barry Meyers-Rice.



Figure 3: *Utricularia* 'Asenath Waite', photo by Barry Meyers-Rice



Figure 4: *Utricularia* 'Asenath Waite', photo by Barry Meyers-Rice

HIGHLIGHTS OF A TRIP TO WESTERN AUSTRALIA

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Keywords: travelogue: Western Australia (Australia), *Drosera*, *Utricularia multifida*.

Introduction

From late September 1999 I enjoyed a three-week trip to southwestern Western Australia in which I saw fifty-five taxa of carnivorous plants in the wild, including species I had not seen before. The following is an account of some of the species and sites observed.

My travels took me initially to carnivorous plants in and around Perth, including the woodland in Kings Park in the centre of the city where I was fortuitously in time for the annual spring show. From here I headed south to Harvey, to meet up with Phill Mann and another visiting carnivorous plant enthusiast, Tuan Nguyen from the USA. We did an excellent lot of day trips and then a longer expedition to the south coast, via Cranbrook to the vicinity of Denmark. After a few days I returned to Perth then hired a car to continue my travels along the south coast as far east as Ravensthorpe.

It was an excellent time of year to see carnivorous plants in the southwestern parts of Western Australia, for many species were in flower. In general tuberous *Drosera* were at their best. In particular, the fan-leaved and rainbow sundews were in full growth and often flowering. Many of the rosetted tuberous *Drosera* were beginning to die down. The pygmy species were producing large rosettes, but few were in flower or bud. *Drosera glanduligera* was ubiquitous and commonly in flower (Figure 1). Few other carnivorous plants were seen but *Utricularia multifida* was observed flowering in many areas, and we were treated to a healthy stand of *Cephalotus follicularis*.

During spring this part of the continent experiences the passage of two distinct air masses, which influence the growth and flowering of carnivorous and other plants. Cool, humid subantarctic air masses emanate from the southern Indian Ocean and move from west to east. They bring much of the rainfall to this region, particularly in the cooler months. Warm, dry air from the central part of the continent also moves over this region, and is characterised by low humidity and clear skies. These two types of air masses alternate in their passage. Subantarctic air moving into the region has a well-defined leading edge, marked by a cold front, which brings rain, a drop in temperature and, on either side of its passage, an increase in general wind speeds. Ahead of a cold front, warm northerly winds develop with clear skies. These stimulate many flowers of a range of *Drosera* and associated orchids to open; probably an evolutionary response to capitalise on enhanced insect activity during warm conditions. After the cold front's passage the flowers of many sundews remain closed until a critical air temperature is again reached. I was fortunate to see some sites when warm, northerly winds were blowing, so that the flowers of most species were open.

Summary of Observations of Key Species

Cephalotus follicularis: The Albany Pitcher plant was seen at a peat swamp near the town of Denmark. The site had been burnt the summer before last, which had not only removed the above ground plant mass but had burnt holes into the peat; the fire smouldered for weeks. The signs of the fire were still visible, with

standing dead shrubs still present and a healthy flush of saplings now at their base. The holes in the peat had filled with water and were variably filled with large, well-coloured clumps of *Cephalotus*, with some pitchers almost fully underwater; the plants had grown back strongly from unburnt roots. Individual clumps measured up to 60 cm across and had a mass of pitchers. These traps were up to 6 cm long and generally well coloured, and the few that were opened invariably contained the larvae of a dipteran. Emerging scapes were seen at the centre of many rosettes.

Drosera hamiltonii: The one site of this plant we visited had been disturbed by the construction of a fence. This had led to the removal of all plants beside the road. However, several clumps of *D. hamiltonii* were found, probably emerging from undisturbed roots. The rosettes were growing in open, sunny conditions and were up to 5 cm across. Three rosettes had scapes just clearing the unfolding leaves. This species had actually benefited from the recent clearing.

Drosera bicolor: Small colonies of this delightful species were seen at the type location. The species grows in deep white quartz sand, which supports a low open shrub land. This small erect tuberous *Drosera* grew in slight depressions and was in flower at the time of my visit. The flowers showed the distinctive red dot at the base of each otherwise white petal, and the very short petiole of the lower stem leaves was clearly visible. Heavily bedewed imbricate rosettes of *Drosera zonaria* also grew nearby in this habitat, but were not seen with *D. bicolor*.

Drosera erythrogyna: This gracile species was seen at a number of sites, growing close to *Cephalotus* and *D. hamiltonii*. It is by far the tallest of any sundew and a spectacular plant on the edge of the *Cephalotus* site approached 3 metres in height. This massive, and probably quite old plant had twelve branches in the upper half and was estimated to have over 1000 leaves and 400 flower buds. The open flowers have a delightful fragrance, reminiscent of a carnation. One inflorescence on a plant near Albany was also found to be the home for a green flower spider, which waited in ambush for prey on the underside of a petal. A similar flower spider was seen in the inflorescence of a *D. macrantha* subsp. *macrantha* plant further inland.

Drosera gigantea subsp. *gigantea*: A large and locally abundant erect sundew, *D. gigantea* is aptly named. Tuan and I were treated to a superb site for this species near Harvey where this species formed a dense sward on a seepage slope on a granitic hill. The plants were up to 60 cm tall and varied in colour from green to red. Many plants were in flower and, as the flowers were closing at the end of the day, it was seen that several blooms were the nightly homes of a small bee. The plants at this site glowed when backlit by the late afternoon sun, as did the accompanying *D. stolonifera* subsp. *stolonifera* plants. Some variation was seen in this species, with large flowered plants found near Cranbrook, and very red plants at a site near Perth.

Drosera huegelii: In general only a few plants of *D. huegelii* were ever seen at one site, but they were encountered in many locations from near Bunbury to Albany. Plants were seen in bud, flower and fruit and varied greatly in stature. At one notable location, on the summit plateau of Bluff Knoll in the Stirling Range, grows a population of short stemmed plants, up to 8 cm tall. Growing in peaty sand at the base of low shrubs, they have normal sized flowers—up to 2 cm across—which look disproportionately large for the plant. Taller plants, to 40 cm tall, occur at the base of the mountain. The summit plateau reaches 1200 m elevation and is subject to occasional winter snowfall and has more frosts than the surrounding country. It is not yet known whether its short stature is due to genetic or environmental factors, and requires more study.



Figure 1: *Drosera glanduligera*.



Figure 2: *D. menziesii* subsp. *menziesii* shown in flower with the yellow-flowered *D. subhirtella*, near Moodiarup.



Figure 3: *Drosera ramellosa*.



Figure 4: *Drosera barbiger*.

Drosera microphylla: This is an aptly named tuberous species; it has small cauline leaves on an erect stem to 40 cm tall. The red-petalled form of the species near Perth is a rare plant to see flowering for few plants produce flowers, and those that do rarely open them. I was fortunate indeed to see this species flowering at Mark Stuart's place in the hills east of Perth. Here a small group of plants grew in a band across the slope of a hill in gravelly laterite soil. My visit coincided with the passage of a warm, northerly air mass ahead of a cold front, which induced many of the spectacular blooms to open. The glossy olive green sepals and vibrant red petals reflex strongly to expose the crown of stigmas and ring of erect, red stamens with conspicuous yellow pollen.

Drosera menziesii subsp. *menziesii* (Figure 2): A few different flower forms of *D. menziesii* subsp. *menziesii* were seen during my travels. Plants on the coastal plain, growing in deep quartz sand had pale pink-petalled flowers, whilst those on the Darling Range and further inland on wet rock slopes and in sandy clay soil generally had darker pink blooms. At one site near Cranbrook grew a form with large vibrant orange-petalled flowers, which, in common with all other variants, were deliciously sweetly scented.

Drosera stricticaulis: Yellow green plants of this species were seen at a number of sites, the majority of which were still in vegetative growth. They grew primarily in the wettest conditions, in seasonally sodden clay loam, often in the company of *D. gigantea*, *D. neesii* subsp. *neesii* and *U. multifida*. This species strongly resembles *D. macrantha* subsp. *macrantha* morphologically but has an erect, self-supporting stem. Its pink flowers are sweetly scented.

Drosera ramellosa (Figure 3): This fan-leaved species was seen growing in abundance along a creek near Cranbrook. It was the most common herb on the creek bank, sometimes growing in dense masses. The basal rosettes were well formed but the ascending stems were only just becoming visible. Many of the plants were in flower and had small, very reflective white-petalled flowers. In wet clay soil beside the creek a few emerging plants of *D. gigantea* and *D. stricticaulis* were also seen.

D. stolonifera subsp. *compacta*: A few populations were observed. Those near Cranbrook and north of the Stirling Range consisted of plants to 5 cm across and high, some of which were in flower. The population seen south of the Stirling Range consisted of much smaller plants, which were similar in stature to *D. stolonifera* subsp. *monticola*, which is endemic to the highest peaks of the Stirling Range.

Drosera stolonifera subsp. *stolonifera*: This robust species grows in abundance in several sites to the south east of Perth. Some notable sites, in the Darling Range consisted of very open woodlands on thin soil on the slopes of granitic rock outcrop. In this environment *D. stolonifera* subsp. *stolonifera* was the dominant herb in terms of size, abundance and visibility. Multi-stemmed plants grew to 30 cm tall and frequently had open white-petalled flowers on inflorescences emerging from the centre of the small basal rosette and, less commonly, at the apex of ascending branches. The flowers were sweetly scented and most were pollinated, as evidenced by the abundance of seed being set. This species was an efficient carnivore in terms of prey caught, and in one notable plant, a dragonfly with a body 5 cm long had been caught by many leaves after apparently attempting to fly between stems.

Drosera erythrorhiza subsp. *erythrorhiza*: Several populations of this rosetted plant were seen, generally in deep quartz sand soil. This species was nearing the end

of its growing cycle and many populations consisted of the dying remains of rosettes. However, at a site near Cranbrook, where the species was seen growing in laterite-derived soil, the plants were still photosynthesising and trapping insects but the rosettes were developing increasing levels of red pigmentation, and formed a conspicuous colony of orange-red rosettes up to 6 cm across.

Drosera erythrorhiza subsp. *collina*: This is a variable taxon with respect to plant size and leaf colour. At many sites it was possible to see small rosettes, to 6 cm across, with red-edged green leaves, which appeared to grade into *D. erythrorhiza* subsp. *squamosa*. Larger (up to 12 cm across), fully bedewed rosettes, varied in colour from green, to orange, to reddish. It was seen at many locations in lateritic gravel and sandy clay soils, including several places on the south coast from the Stirling Range and Albany and as far east as Bremer Bay.

Drosera barbigera (Figure 4): Tuan and I had the pleasure of visiting a recently discovered location of the majestic *D. barbigera*. This robust pygmy sundew grew in pebbly laterite soil and had semi-erect rosettes to 4 cm across. The plants were just coming into flower and we arrived in time to see the buds open to a reveal a black-centred orange flower 2.5 cm across. The plants were glorious to behold. The population at this site has been studied by Phill and the plants are smaller than those in other parts of its range

Drosera lasiantha: I was privileged to visit the type location of *D. lasiantha*, a hillslope in the Porongorup Range on the south coast. This site consists of a natural clearing in the Eucalypt woodland, where a diverse shrubland predominates in soil too shallow to support trees. This attractive pygmy sundew grows in a lateritic clayey-gravelly soil and has a vibrant red, semi-erect rosette, which resembled a small form of *D. scorpioides*. The population included plants with stems to 5 cm tall, which appeared to be several years old.

Drosera silvicola (see Back Cover): This is a recently described pygmy sundew that occurs to the southeast of Perth. It has a semi-erect rosette that resembles *D. barbigera* and grows in lateritic gravel soil with a thin cover of leaf litter. The plants grow up to 5cm across and have orange-petalled flowers.

Utricularia multifida: The bladderwort *U. multifida* was commonly seen in many sites, occurring in the floors of seasonal swamps and along drainage lines where the leaves were often shallowly submerged. The lobed, pink flowers were also readily seen growing in roadside ditches. At one location near Bunbury a European honeybee was observed to fly from flower to flower to presumably drink nectar from the base of the nectary spur. The entire scape bent sharply forward under the weight of this visitor. At this location *U. violacea* was also found, however no open flowers were seen.

It was excellent to see so many carnivorous plant species in the wild, and to both revisit some superb sites and see some new sites. It provided me with observations of additional species, including some opportunistic sites of plant-animal interactions, particularly with regards to pollination by, and commensal predation of visiting insects.

Acknowledgments

I wish to thank Phill Mann and his family for his hospitality, and for taking me to some memorable sites.

CONFESSIONS OF A DABBLER

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Keywords: cultivation.

All right, I admit it. I am a dabbler. I am not the one to whose collection other enthusiasts point with admiration and awe. I just have a simple little collection. And, do you know what? I am happy with what I have.

I probably started like many others. I had heard about Venus Flytraps and had become fascinated with them. Plants that can move—and use that movement to trap animals. This was mysterious. When I was about twelve, I found one for sale in a grocery store. I begged my mother to buy it for me, and eventually she relented. With shaking hands, I got it home and took it out. All right, now I have one of these weird plants, I thought. Of course, the instructions that came with it were scant, and on some points outright wrong. It said I should give it little bits of hamburger and did not say much, if anything, about watering. Of course it died very quickly. But my fascination did not.

Fast forward a few (OK, many) years. I passed through college and was a couple of years into my career. Once more, it happened: I ran across another Venus Flytrap in another grocery store. Once more, I bought it. This time, though, the instructions were a little better (either that, or I was better able to understand them—you know how it is with maturity). I had moved to an area with much better libraries and bookstores, so I read some books. Soon I (supposedly) knew what I was doing. Even so, I still did not have much hope because of what had happened to my first Venus Flytrap, and since every plant I have ever had has died within two months of my care (I have a real problem with knowing when there is enough water).

But, lo and behold, this plant lived. I kept it on the balcony of my apartment where it caught its meals. It was easy to water correctly—I just kept it standing in a tray of water. At last, a plant that I could not over-water. The plant lived. A year later, I bought another from the same grocery store. And so, for a while, I had two. Then, I do not know why, one of them died.

As the years progressed, the remaining plant thrived. I probably made many mistakes along the way, but the Venus Flytrap survived them all. It moved with me when I bought a townhouse. It moved again when I moved in with my girlfriend. It provided a connection point for her five year old daughter and me. Isn't it amazing how fascinated kids are with these plants? I sometimes think that those of us who keep these plants are just the lucky one who do not outgrow that fascination.

My Venus Flytrap grew too large for its small pot, so I transplanted it late last year. I had five small pots of Venus Flytraps and I was “plant sitting” one I had bought for my girlfriend's daughter, who had wanted one of her own. My girlfriend and I moved once more when we married, so my original plant has now been through four homes.

I have visited *California Carnivores* a couple of times now. (Ironically, it works out that I can go when I am leaving for my vacations, rather than coming back. I do not think a plant would like to go backpacking with me.) Last January, I went to a carnivorous plant seminar at the University of California at Santa Cruz. As part of the seminar, all the attendees were given a Cape Sundew and a Purple Pitcher Plant. Also, we saw some of the carnivorous plants at the University Arboretum.

Recently, while in the local home supply store, I picked up a Cobra Lily and a *Nepenthes* plant. The *Nepenthes*, I killed within a month. The Cobra Lily is still hanging on.

I would really like to say that I am becoming more of an expert at growing carnivorous plants. But, as my experience with the *Nepenthes* shows, I am probably not much better than when I started, just a little better informed. It would be nice to say I am plan-

ning on creating an extensive bog garden and growing all sorts of rare, exotic and beautiful carnivorous plants. But, I am realistic. I realize that I will probably never do any such thing. I do not have the time, talent or the inclination to do so.

But, do you know what? I am OK with that. I like reading about and looking at carnivorous plants. I really enjoy the plants I am able to grow. It brings me a lot of pleasure and I very much like it when my plants allow me to spend more time with my daughter. I am satisfied with what I am—a dabbler. And so, I now share with pride, my collection:



Russell's dabbings.

THE ICPS 2000 WORLD CONFERENCE PHOTOGRAPHY CONTEST

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Here at last are the winning contributions for the ICPS Photography Contest, held at the 2000 World Conference in San Francisco. The three judges for this event were myself, Bill Weaver, and Barry Meyers-Rice.

The photographs taken by Chien Lee (Malesiana Tropicals) were so superb that he won many of the awards of the contest. Unfortunately none of his images were available for this issue. We hope to present some of his photographs in a future issue of *Carnivorous Plant Newsletter*. The names of the contest categories and winners (in parentheses) were:

Plant in habitat (Chien Lee for "*Nepenthes pectinata*");

Plant in cultivation (David Ahrens for "*Sarracenia flava*");

Close-up/macrophotograph (a tie—David Ahrens for "*Sarracenia flava* lid" and John Brittnacher for "*Sarracenia alata* and spider");

Insect/animal interactions (Thomas Carow for "*Nepenthes tobaica* and *Thomisus nepenthophilus* spiders", on this issue's front cover);

Original art/abstract (Eric Schlosser for "*Utricularia alpina*");

Plant and human interaction (Chien Lee for "Woman with *Nepenthes ampullaria* cooking vessel").

Each winner will receive one year's membership in the ICPS.

Honorable mentions were given by the judges for:

Rarest/most beautiful taxon (Chien Lee for "*Nepenthes campanulata*");

Photo by person under 16 (Matt Martinez for "*Sarracenia leucophylla*");

Funniest photo (Tina Kessler for "Fisheye view of *Sarracenia flava*").

All three of the Judge's favorites went to Chien Lee, for his "*Nepenthes pectinata*", "Woman with *Nepenthes ampullaria* cooking vessel", and "*Nepenthes ampullaria* in habitat".



Figure 1: David Ahrens—*Sarracenia flava*.



Figure 2: Eric Schlosser—*Utricularia alpina*.



Figure 3: John Brittnacher — *Sarracenia alata* and spider.



Figure 4: David Ahrens—*Sarracenia flava* lid.

CEPHALOTUS FOLLICULARIS: CULTIVATION WITH CAPILLARY MATS

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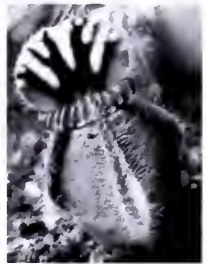
Keywords: cultivation: *Cephalotus follicularis*.



I have grown *Cephalotus follicularis* throughout the years with various degrees of success. I tried the latest and greatest techniques that “should work,” except they did not do very well for me! For the last two and a half years I have grown my more than twenty *Cephalotus* plants very well by using a capillary mat system, and I thought I would give my two cents worth about it.

The 160 liter (40 gallon) tank that I use for growing plants lies on its side. Illumination is provided by four 40 watt florescent lights, set to a photoperiod of 14 hours in the fall-winter and 16 hours in the spring-summer. The lights are 15 cm (6 inches) from the surface of the soil in the pots. The summer temperature in the room with the tank is about 24° C (75° F) at night and 35° C (95° F) during the day. During the winter it is about 14° C (25° F) cooler.

Remember I said the tank is on its side? On the open top (now, a wall), I glued a pane of glass over the lower one fourth part. This formed a water reservoir that did not leak since I used silicone glue. Inside the tank are several inverted 5 cm (2 inch) plastic pots which support a platform of egg-crate plastic mesh. On top of the mesh is a plastic sheet, which aids in the capillary action of the mat that is laid upon it. The mat drapes over the egg-crate mesh, down into the bottom of the water reservoir. For more information about capillary mats, talk to your local nursery or search the web (i.e. <http://www.charleysgreenhouse.com>).



With the mat in place, purified water (distilled, rainwater, reverse osmosis, or whatever) is poured into the reservoir until the water level is just a few cm (1 inch) below the level of the mat. Make sure the mat itself is fully wetted. Plastic plant pots are placed directly on the mat. A great thing about this system is that it is self-watering—I can leave the plants alone for two to three months between watering!

With this system, not all potting media work well because the plants are not watered from the above. Since the water is wicked to the pot through capillary action from the mat, the potting medium must maintain contact with the mat through the drainage holes at the bottom of the pots. The media that I use is very loose and light. It consists of perlite, peat, sand and small orchid bark in 3:2:1:1



proportions. The orchid bark and sand are optional. Once the potting mix is prepared and moistened, the plants are potted and gently placed on the mat. They are watered from above once (this is the only time they are top-watered). Avoid splashing the crown. Do not move the pots after this, but if you must, then make sure the drainage holes are plugged with moist peat before replacing the pots onto the mat so that the capillary action can resume. Watering the plants is now a simple matter of refilling the reservoir as the water level decreases.



As a fertilizer, I mix a pinch of 30-10-10 fertilizer, and ten drops of Superthrive, into 4 liters (1 gallon) of water. I use this to occasionally fill their pitchers.

I propagate my plants by leaf propagation during spring through early summer. Both noncarnivorous and pitcher leaves work. Usually I use material that is dislodged from the plants while transplanting, or from older growth that I removed to make room for new leaves. To remove material for propagation do not remove part of the plant stem with the leaf, just tear the leaf away from the plant. Pull the leaf back downwards and it will break off at the point where it was attached. Then without wetting it, lightly dip the petiole base into rooting hormone and stick it 0.5 cm. into the potting media. If it is a noncarnivorous leaf, lie it upon the soil surface. If it is a pitcher leaf, make an indentation into the soil to keep the pitcher upright. Cover the cuttings with an inverted, transparent cup and fill any pitcher leaves with water to ensure the humidity is high. I do not use fungicide. In six weeks, roots should develop and the cup can be removed. I usually propagate cuttings in the pot and medium that I want it in from the very start so that it can continue growing without interruption for 1 to 2 years.

I have successfully used the following mixes for leaf propagation: perlite, 1:1 perlite/vermiculite, 1:1 peat/sand, 1:1:1 peat/perlite/sand, and the standard potting media that I use for the mature plants.

As plants mature, side-shoots begin to develop from the tough rhizome. I let these grow until they are at least half the size of the parent plant. Then, I cut the child plant from the parent, all the way back to where it first emerged from the rhizome. I treat the new plant as a leaf cutting. If the cutting has mature pitchers I fill them with my fertilizer solution described above. I think it helps the plant survive and grow quickly.

I grow other plants on my capillary mats: *Darlingtonia californica*, *Drosera spatulata*, *Sarracenia purpurea* subsp. *venosa*, and *Sarracenia psittacina*.

So good luck growing your plants. I do not sell or trade my plants, but you will find nurseries in this issue of Carnivorous Plant Newsletter who would love to be your supplier.

(All photos appearing in this article were taken by the author—Ed.)



A NEW POT DESIGN FOR TUBEROUS *DROSERA*

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Keywords: cultivation: tuberous *Drosera*.

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Drosera peltata, a tuberous sundew, can be cultivated in common greenhouse pots, but in the wild this and other tuberous *Drosera* may send shoots for tuber production further underground than most pots can accommodate. A pot about 30 cm (1 ft) deep is relatively easy to construct and can be used to more closely mimic the depth available at natural sites by providing greater depth for a particular pot diameter. The pots can be assembled cheaply and easily.

Materials Needed: 30 cm (1 ft) length of 8.8 cm diameter (3.5 in) PVC pipe, fiberglass window screen mesh, clear acrylic plastic sheeting, adhesive such as quick gel superglue (although silicone sealer can also be used), roll of duct tape, and a hacksaw with a fine-toothed blade.

Cut several V-shaped notches approximately 1-2 cm tall around the bottom of the PVC pipe using a hack saw to provide for better drainage when the pot is assembled. Next, cut a square, circular, or diamond-shaped piece of wire mesh that can easily be wrapped across the bottom of the pipe. A diamond-shaped piece is best as this shape most easily wraps around the bottom of the pipe. Using duct tape secure the wire mesh in



Figure 1: Top view of a constructed tall pot with a nearly dormant *Drosera peltata*.

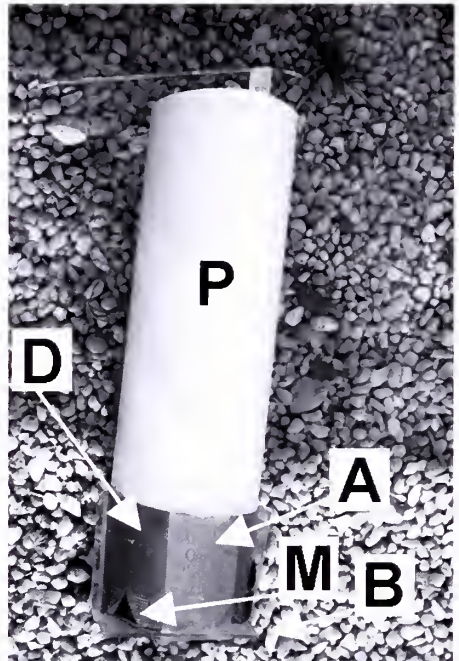


Figure 2: View showing parts of the pot. P: PVC pipe; A: acrylic base side; B: acrylic base bottom; M: wire mesh covering drainage slit; D: duct tape securing the wire mesh.

place by wrapping a few layers of tape around both the mesh and the pipe. For the pots we have produced, humidity and direct contact with moisture have not affected the adhesive properties of the tape).

Again using the hack saw, cut a 9 cm (3.5 in) square piece of clear acrylic. Place the pipe on top of the square and mark the edge of the pipe on the acrylic sheet using a marker. Then cut four 7.5 cm × 3.8 cm (3 × 1.5 in) rectangles of acrylic, and using the superglue, attach these smaller pieces to the square piece of acrylic where the edge of the pipe was marked. Apply pressure while drying, which should only take a few minutes. The pipe should then fit snugly into the acrylic base and will be held in place by the four side pieces. A wider base may be used to ensure greater stability; in this case glue the four side pieces of acrylic sheet to the top of the acrylic base rather than to the cut sides of the base. The pot is now ready to be filled with an appropriate soil mixture and for planting.

SPECIAL REVIEW: ICPS WORLD CONFERENCE 2000 VIDEO

Reviewed by STEFAN P. WOLF (www.karnivoren.com)



The ICPS held its 2000 conference of the ICPS in San Francisco, USA. This was the third big event of this kind and the list of speakers was the who-is-who of top experts in the field of carnivorous plants.

Video expert Siegfried Hartmeyer produced this 110 minute recording which I can recommend without reservation! It captures well the incredible charm of the meeting and I envy all those who—unlike me—were able to attend.

The introductory part begins with some local impressions: a ride with one of the world-famous cable cars on the steep San Francisco streets, a look at the legendary prison island of Alcatraz, and short views of the city and of Fort Mason Center.

The rest of the video consists of selections from speakers' presentations. Long segments are devoted to presentations by Andreas Wistuba, Christopher K. Frazier, Robert Cantley, Jan Schlauer, Heiko Rischer, and Barry Meyers-Rice. In an absolute highlight, with thirty minutes shown, Ch'ien Lee from Malaysia captivates the audience with his talk on recent *Nepenthes* discoveries. It is no wonder that Ch'ien won so many categories in the conference's photo contest!

In the following section we now see some short sequences of various lectures by Katsuhiko Kondo, Charles Clarke, Douglas Darnowski, Robert Gibson, Teresa Golembiewski, Madeleine Groves, Herbert Kesler, Laurent Legendre, Hawkeye Rondeau, and a presentation by Siggie Hartmeyer on his new multimedia CD-ROM.

The video is interspersed with segments showing the large plant sale and the (envy! envy!) huge buffet banquet, as well as very funny scenes of Barry Meyers-Rice talking about diverse topics such as *Darlingtonia*, a brilliant discussion about the historical details of how the Venus Flytrap got its name, and even a somewhat X-rated slide show of carnivorous plants!

The tape leaves me with impatient anticipation for the next international meeting, which after these impressions, I simply have to attend.

The tape is available in various videotape formats (PAL, NTSC) compatible with machines in various countries. The video costs approximately US\$35, depending on shipping. Interested people should contact Siegfried Hartmeyer at S.Hartmeyer@t-online.de (email) or Wittlinger Str. 5, 79576 Weil am Rhein, Germany.

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LITERATURE REVIEWS

Fischer, E., Porembski, S. & Barthlott, W. 2000. Revision of the Genus *Genlisea* (Lentibulariaceae) in Africa and Madagascar with Notes on Ecology and Phytogeography. *Nordic Journal of Botany* 20: 291-318.

The present publication is an up-to-date overview of the Old World representatives of the most thoroughly neglected major carnivorous plant genus, *Genlisea*. It contains a key, descriptions of all species, accurate line drawings, accounts on representative herbarium specimens, synonyms, and the relevant literature (even our journal is cited on p. 317!). Thus, it is a legitimate sequel to the monumental work by Peter Taylor, whose first grand publication on Lentibulariaceae featured the *Utricularia* species of the very same geographical range. Together with the extensive treatment of New World *Genlisea* by Elsa Fromm-Trinta, the genus is now covered in its entirety by a limited number of scientific publications (just clip them together and you have a monograph).

As a special goodie, the paper includes distribution (dot!) maps of all treated species. Furthermore, four photographs of living plants and organs are included. Section *Tayloria*, comprising the violet-flowered species of southeastern Brazil with laterally bivalvate (rather than poricidous) capsules, is elevated to subgeneric rank, "as there are no intermediate forms and both groups seem well defined" (p.302). To complete the joy, *G. taylorii* (the original spelling "*taylori*", contrary to ICBN Rec. 60C.1., is an orthographical error to be corrected according to ICBN Art.60.11.), named in honour of Peter Taylor, is described as a new species (p.311). It is similar to *G. angolensis* but differs by glabrous (not glandular) pedicels, the glabrous or basally glandular (not hispid) sepals, sparsely (not densely) glandular ovaries, narrower corolla upper lips, and longer corolla lower lips.

This paper is simply a must. (JS)

Furuta, T. & Kondo, K. 1999, Sites of 18S-5.8S-26S rDNA Sequences in Diffused-Centromeric Chromosomes of *Drosera falconeri*, *Chromosome Science* 3: 69-73.

Like the paper by Kondo & Furuta (see review below), this is a rather technical paper dealing with details of *Drosera* chromosome structure. In brief, rDNA sequences have been detected in or near the so-called satellite region of some (2 to 5) chromosomes in *D. falconeri*. In contrast to the unusual diffused-centromeric organization and the not always terminal position of telomere sequences in these chromosomes (v.s.), the present observation appears rather normal. In *D. petiolaris*, the relationship between rDNA sequences and satellite regions appears, however, less clear. (JS)

Kondo, K. & Furuta, T. 1999, Region *in situ* Hybridized by the *Arabidopsis*-Type Telomere Sequence Repeats in *Drosera* Chromosomes, *Chromosome Science* 3:63-67.

While previous papers dealt with the structure of centromeres in *Drosera*, this one focuses on telomeres, the "ends" of chromosomes in this genus. By hybridization with a DNA probe of the sequence characteristically found in telomeres of *Arabidopsis* (the traditional model plant of geneticists, with normal, localized centromeres), it is shown that the "standard" telomere sequence motif can be found also in the chromosomes of the investigated sundew species (*D. falconeri*, *D. roseana*, and *D. petiolaris*), which display an unusual, diffused centromeric condition. The

position of the telomere sequence is, however, not always restricted to the ends of chromosomes, and it is speculated that some chromosomes of e.g. *D. falconeri* originated by tandem fusion at the telomere regions of previously separated progenitor chromosomes. (JS)

Todorov, D.K., Ilarionova, M.V. & Pajeva, I.K. 2000, Effectiveness of a *Dionaea muscipula* E. Preparation Carnivora on Antitumour Drug-Resistant Tumour Cells, Dokladi na B'lgarskata Akademiya na Naukite 53: 129-132.

This pharmacological study sheds some light on the activity of an commercially available extract ("Carnivora") from Venus' Flytrap. It is shown to have a "moderate antiproliferative effectiveness on sensitive and resistant tumour cells", "at relatively high concentrations and after a long time of exposure". This "might be explained by the relatively low concentration of active naphthoquinone derivatives". Further studies and especially clinical trials must be performed previous to a reliable assessment of Carnivora as a drug. (JS)

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